



NUCLEAR AND CONVENTIONAL FORCES: ISSUES FOR NATIONAL SECURITY, SCIENCE AND TECHNOLOGY

28 APRIL – 1 MAY 2003

With the end of the Cold War and the victory of US and coalition forces in the Gulf War in the early 1990s, there was a sense that the roles of nuclear and conventional forces were changing. Over the last decade, a dramatically changed security environment, the revolution in military affairs (RMA), and reduced nuclear forces have reinforced this perception and promised to be the foundations of an altered calculus of deterrence and defense.

This emerging reality has not always been clearly understood or articulated, but the Bush Administration, as had its predecessors, is striving to grapple with its features. President Bush's remarks at the National Defense University (NDU) on May 1, 2001 recognized that deterrence is changing. He called for a "new framework" for going beyond Cold War deterrence, which he described as based upon "the grim premise that we can destroy those who seek to destroy us." In place of the old Soviet threat, the President expressed concern about proliferation and terrorism involving nuclear and other weapons of mass destruction (WMD). After the terrorist attacks of September 11th, the subsequent anthrax attacks and growing knowledge of Al Qaeda's pursuit of nuclear, biological and chemical weapons, these concerns have intensified.

The President did not offer a specific proposal or program. His ideas are being developed primarily in the context of the Quadrennial Defense Review (QDR) and the Nuclear Posture Review (NPR), as well as the new national security strategy, which provides key elements of the "new framework" for which the President called.

This emerging strategic framework reflects a changed security environment, which includes:

- a new relationship with Russia;
- the prospect of multiple opponents, including those armed with WMD and ballistic missiles; and
- uncertainty, and the possibility—even the probability—of surprise.

Newly formulated strategic objectives are to:

- assure friends and allies;
- dissuade future military competition;
- deter threats against US interests, allies and friends; and
- defeat adversaries if deterrence fails.

To meet their objectives, the strategy calls for a new triad consisting of:

- nuclear and non-nuclear offensive strike forces;¹
- active and passive defenses; and
- a revitalized defense infrastructure (including the nuclear-weapon complex).

Command and control, intelligence and a new planning approach support this triad.

As the United States further defines and implements the new strategy, the evolving capabilities, roles and impacts of nuclear and conventional forces raise critical questions. Will the nuclear and conventional forces necessary to support a robust deterrent and defense capability be available when needed in the future? If so, when? How will they be configured? What is the role of science and technology in bringing about changes in nuclear and conventional forces? What are the anticipated requirements? What are likely to be the greatest challenges? Will there be tradeoffs between them? How should these capabilities be integrated, including force mixes, concepts of operations, etc.? How should these forces and the strategic triad relate to other military and nonmilitary national security capabilities? How will arms control and nonproliferation obligations and objectives affect the development of these new forces? What role will cooperative programs and international agreements in nonproliferation and arms control play in the new security environment? How will U.S. and international security be affected by effective defenses (active and passive), command and control, intelligence and other capabilities?

A conference will be held at Los Alamos National Laboratory to address these and related questions. This conference will address evolving nuclear and conventional forces; the prospects and issues related to their integration and transformation; and their impact in the context of the new strategic environment.

The Conference will be completely unclassified, but with attendance limited to registered Los Alamos badge-holders and a limited number of external invitees.

The conference is organized in eight segments, including an important roundtable discussion of key questions and issues for science, technology and national security. Following the presentations for each segment, the corresponding speakers will convene as a panel for a discussion to include questions from the floor. The organization of each of the conference segments is described below. Publication of the conference proceedings is planned.

¹ The nonnuclear strike forces include conventional forces, information operations (IO) and special operations forces (SOF).

AGENDA OUTLINE

MONDAY MORNING (4/28)

Keynote Address

How is U.S. Defense strategy being transformed? What are the key drivers in this transformation? What are the political, strategic and technological antecedents of this transformation? What is really new about the ways in which these elements are being integrated into a coherent strategy? What are the implications of this transformation for U.S. security and for the international security environment?

I. The New Strategic Environment

What key political, economic, social, technical and other issues have driven the changes in the international security environment? How has the end of the Cold War shaped the current strategic environment? How has the end of the U.S. and Soviet Union ideological struggle changed the strategic environment? Who are the other major state actors on the international stage, and what are their roles? How will the United States and the world deal with the unprecedented advantage the United States has in military and economic power?

What are the likely threats to security and stability in the future? What is the nature of the threats to security and stability posed by nuclear proliferation? By other weapons of mass destruction? By missile proliferation? By terrorism? How can we be prepared for technological and other surprises?

The International Security Environment

Major State Actors

Russia

China/East Asia

Proliferation, Terrorism and Non-State Actors

Intelligence Requirements and Issues

MONDAY AFTERNOON (4/28)

II. Deterrence and Beyond: Strategic Responses

What are the policy implications – especially the nuclear policy implications – of the new security environment?

What are the future roles of nuclear weapons in the context of evolving security requirements? How can and should we be prepared to respond to security threats? What is the role for nuclear weapons? What roles will conventional forces play in being able to meet current and future needs? What alternatives might be possible for the future of nuclear deterrence? Who remains to be deterred by U.S. nuclear weapons? By the nuclear weapons of other states? How is international security and stability affected by the prospect of reduced numbers of nuclear weapons? Does the new security environment allow a drastic reduction in nuclear weapons in the near future? Is a world without nuclear weapons achievable or even desirable?

How can we better understand the evolution (past, present and future) of nuclear deterrence in meeting national and international security needs?

- Conventional Deterrence
- Nuclear Deterrence: Past and Future
- A New Context for Deterrence and the Triad
- The New Triad
- Science & Technology Dimensions

TUESDAY MORNING (4/29)

III. Evolution of Nuclear Forces

How can and should nuclear forces evolve to meet changing national security requirements? Will today's nuclear weapons be able to meet these needs? How should force composition and weapons capabilities change to meet future needs? How should new nuclear-weapon systems (including new delivery systems) be configured to meet future contingencies (and be able to respond to surprise)?

What are the greatest technical challenges in meeting nuclear stockpile requirements? How can we ensure our ability to respond to these challenges? What is required of a science-based stockpile stewardship program in order that it be sustainable and able to meet these challenges successfully in the absence of nuclear testing?

- The Technological Environment
- US Nuclear Forces
- Strategic Planning and the Creation of the Stockpile Stewardship Program (SSP)
- SSP & the Responsive Infrastructure–Realities and Expectations
- Future Nuclear Postures and Requirements

TUESDAY AFTERNOON (4/29)

IV. Defense Transformation and New Roles for Conventional Forces

How have conventional force capabilities evolved to meet changing security requirements? How will they evolve to meet future requirements more effectively? How has, and will, the evolution in these capabilities drive changes in U.S. military posture? What have been and will be the greatest technical drivers for these changes? What will be the greatest technical and operational challenges in the future?

What role should Information Operations (IO) play in the strategies for conventional/nuclear force operations? What will be the new requirements for Command, Control Communications, Computer systems, Intelligence, Surveillance and Reconnaissance (C⁴ISR), as well as for other support capabilities? What will be the greatest technical challenges in meeting these emerging requirements?

Conventional Forces and Defense Transformation
Defense Transformation
Future Warfare
Space
Science and Technology in Defense Transformation

WEDNESDAY MORNING (4/30)

V. Integration of the New Triad

How should U.S. nuclear and conventional forces, together with supporting elements, be integrated to provide a robust deterrent and defense capability? What kinds of tradeoffs should be anticipated between nuclear and conventional forces? Between offense and defense capabilities? How will these force capabilities be integrated with C⁴ISR and associated support capabilities?

What political and technological factors may hinder achieving this integrated capability? What other factors will affect the achievement of this integration?

How will these forces and capabilities be configured?

Strategy for Integration
Offense/Defense Integration and Tradeoffs
Conventional/Nuclear Integration and Tradeoffs

WEDNESDAY AFTERNOON (4/30)

VI. Implications and Issues: International Perspectives

What will be the reactions of others to the new strategic environment and to the path being pursued by the United States? What have been, and might be, the approaches taken by others in response to the changing international security environment and to changing U.S. strategy? What role will coalition-building play?

International Perspectives

France

China

Russia

THURSDAY MORNING (5/1)

VII. Implications and Issues: Alliances, Arms Control, Nonproliferation and Counter-Proliferation

What are the implications of the new U.S. defense strategy for broader international security interests?

How will the evolving nuclear/conventional force structure relate to other military and nonmilitary national security capabilities and interests? How will existing and future arms control and nonproliferation obligations and objectives affect, and be affected by, the development of these capabilities? What will be the role of cooperative engagement, e.g., through threat reduction programs, confidence building measures, etc., and nonproliferation and arms control agreements in achieving U.S. national and international security objectives.

How will the U.S. defense strategy, together with associated forces and capabilities, affect security relationships between the United States, its traditional allies and other countries?

Impact on International Relations: Norms & Institutions

Impact on Relationships and Alliances

Arms Control

Non- and Counterproliferation and Counterterrorism

THURSDAY AFTERNOON (5/1)

VIII. Roundtable on Critical Questions for Science, Technology and National Security

What are the critical science and technology challenges facing the United States and the world in the face of the evolving security environment? What are the most important technical issues that the science and engineering community should address? What potential S&T advances can have significant impacts on reducing risks to security and stability?

In what specific areas of future U.S. conventional and nuclear force requirements can science and technology have the greatest impact? How can S&T best support Defense Transformation?

What are the most productive roles the national security laboratories can play in responding to these challenges?

These and other critical questions identified for discussion in the preceding panels will also be addressed in this forum.